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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/587,605 | 07/27/2006 | Kenji Nishi | 06508/LH | 8934 |
| 1933 7590 05/18/2009 FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 220 Fifth Avenue 16TH Floor NEW YORK, NY 10001-7708 | | | EXAMINER RAINEY, ROBERT R | |
| | | | ART UNIT 2629 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/587,605 | Applicant(s) NISHI, KENJI | |
| | Examiner ROBERT R. RAINEY | Art Unit 2629 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
- 4a) Of the above claim(s) 9-79 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendments to claim 6 effectively overcome the objection to the claim in the previous office action.
2. Applicant's arguments, see the section starting at the third to last line of page 26 and continuing through the end of the paragraph starting on page 27 and continuing onto page 28, filed 2/04/2009, with respect to the rejection(s) of claim(s) 1-8 under 35 USC § 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art reference(s).

Requirement for Information

3. Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application. In searching the prior art examiner found U.S. Patent No. 7,068,444 to the same inventor that includes figures common to the instant application and claims some similar features, especially when considering all of the claimed inventions and embodiments.

In response to this requirement, please provide answers to each of the following interrogatories eliciting factual information:

- The first publication dates of the priority documents for 7,068,444.
- The application numbers for all U.S. applications by the inventor having figures or claimed features in common with the instant application.

The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained may be accepted as a complete reply to the requirement for that item.

This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action.

Claim Objections

4. Claim 6 objected to because of the following informalities: There seems to be a comma missing or alternatively an extra comma. As written a portion of the last clause reads "... and to a distance where without the front side of the face of said user being in contact with said face fixing members, a sight line...". In order to properly set off the prepositional phrase "without ... members" modifying "a distance where" a comma is required between "where" and "without" to match the comma after "members" at the end of the phrase. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-4 and 6-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,057,810 to *Roell et al.* ("*Roell*") in view of U.S. Patent No. 3,205,303 to *Bradley* ("*Bradley*") and further in view of U.S. Patent No. 5,815,126 to *Fan et al.* ("*Fan*").

As to **claim 1**, *Roell* discloses a supported near-eye display and in particular: an image display device comprising: a display portion that is configured to project, via eyepiece optical systems respectively correspond to the eyes of a user, a light emitted from a two-dimensional light emitting type photoelectric device which is perpendicular to a light beam emitting direction onto the eyeballs of said user (see for example Fig. 2 item 104); and

a supporting portion that supports said display portion at a portion that is not in contact with said user (see for example Fig. 2 the rest of the items).

Bradley discloses a near-eye display and in particular that providing and not providing a supporting portion that supports a display portion at a portion that is not in contact with said user was known and that the head contact points of a head-mounted-display (HMD) may be used to allow the movement of a user's head to move a supported display (see for example Fig. 12, which shows a head-mounted-display, and Fig. 4-6, which show a supported display that uses a

similar structure in order to allow the supported display to follow head movements).

Roell and *Bradley* are analogous art because they are from the same field of endeavor, which is near-eye displays.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to provide the supported near-eye display of *Roell* with head contact points from a head-mounted display as taught by *Bradley*. The suggestion/motivation would have been to provide advantages such as to allow the display and therefore the displayed images to be controlled primarily by movements of the user's head (see for example *Bradley* 1:38-41).

Fan discloses a head-mounted near-eye display and in particular: a face contact portion that is connected to the display portion, that is configured to contact with face sides of said user so as to sandwich the face of said user (see for example Fig. 9), and that is capable of changing a distance between said eyepiece optical systems and the eyes of said user (see for example Fig. 9 items 72, 73, and 74).

Roell and *Bradley* and *Fan* are analogous art because they are from the same field of endeavor, which is near-eye displays.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the head-contact system of the *Fan* HMD as the head-contact system in the device after *Roell* and *Bradley*. The suggestion/motivation would have been to provide advantages such as use a

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known head-contact system or to permit the user to properly adjust the visor for a snug fit (see for example *Fan* 10:59-60).

As to **claim 2**, in addition to the rejection of claim 1, *Fan* further discloses that said display portion is movable in accordance with movement of the head of said user, and with the distance between said eyepiece optical systems and the eyes of said user, such that a portion of said face contact portion is a point of support (see for example Fig. 9; note that foam pads 84 are points of support).

As to **claim 3**, in addition to the rejection of claim 1, *Fan* further discloses that said face contact portion is configured to come into contact with the face sides by sandwiching both ears of said user, and

wherein a portion sandwiching said both ears comprises a sound output mechanism (see for example Fig. 9 speaker components 83 and 11:26-35).

As to **claim 4**, in addition to the rejection of claim 1, *Fan* further discloses that said face contact portion comprises an elastic member for coming into contact with the face sides of said user (see for example Fig. 9 foam pads 84 and 11:26-35), and

wherein said face contact portion comprises, independently of said elastic member, a width changing portion for changing a face sandwiching width (see for example Fig. 10 swiveling earpieces 80 and 11:36-44 or Fig. 11 hinges 71 and

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11:47-49), and a distance changing portion for changing the distance between said eyepiece optical systems and the eyes of said user (this was already covered in the parent rejection).

As to **claim 6**, in addition to the rejection of claim 1, *Fan* further discloses that said display portion comprises face fixing members in a portion that faces a front side of the face of said user (see for example Fig. 14 nose bridge 59 and 11:66-67), and

wherein said face contact portion is configured to change a position thereof to a distance where the front side of the face of said user is in contact with said face fixing members (see for example 10:59-60 especially "snug fit"), and to a distance where without the front side of the face of said user being in contact with said face fixing members, a sight line of the both eyes of said user is, relative to said display portion, movable around the axis passing through both ears of said user (see for example abstract especially "The display can be mounted to a frame so that the user can move the display in and out of the user's field of view without adjusting the supporting harness that holds the display on the user's head." and 12:15-21 especially "...can be used to rotate the visor relative to the headband to hold the visor in a partially raised position" and Fig. 9, note that the visor must be extended from the "snug fit" location in order to be raised just as one cannot raise ones glasses without extending the distance between the glasses and the tops of ones ears).

As to **claim 7**, in addition to the rejection of claim 6, *Fan* further discloses that said face fixing members an eyeglass frame of said user, and are adapted to be discretely provided around and above and below said both eyes (see for example Fig. 14 note the curved portion above eyeglass reliefs 57 that is above and extends around the sides of both eyes and nose bridge 59 is below the eyes and it would be simple duplication to provide a shield similar to the curved section below the eyeglass reliefs as well as above them if desired), and

wherein said display portion comprises light-shielding members which are for shielding light from outside and which are adapted to be on right-and-left outsides of said eyeglass frame (see for example Fig. 14 and 6:35:37 note that the eyeglass reliefs 57 extend around the right-and-left outsides of the eyeglass frame relief areas and shield light from the outside).

As to **claim 8**, in addition to the rejection of claim 6, *Fan* further discloses an embodiment in which the distance between the distance between the optical elements and the eye of the user is changed by allowing the distance between the face fixing members and the first optical element of the display to change based on recognition of whether or not the user is wearing eyeglasses (see for example Fig. 57E and 57H or 24:24-27) or in the language of the claim that

said display portion comprises a frame recognition portion that recognizes whether there exists an eyeglass of said user (see for example Fig. 57E and

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57H; the recognition is simply that the motion of the eye toward the display portion stops when the eyeglass recognition portion contacts the glasses; the recognition portion is at least the front element that contacts the glasses; note that eyeglasses are known to have frames, so any recognition of eyeglasses is also a recognition of frames and the recognition location shown by Fan would seem to be the one most likely to recognize the broadest number of eyeglass frame styles), and

wherein a thickness in a optical axis direction of said eyepiece optical systems is changeable in accordance with recognition results by said frame recognition portion (see for example Fig. 57E and 57H; the difference in thickness or distance to the eye is apparent).

One of ordinary skill in the art would have been able to recognize the advantages of such an adjustable system, such as to allow a larger field of view and exit pupil aperture to users not wearing glasses, and could have implemented a system to incorporate a change in distance between the first optical element of the display and the face fixing members as suggested by the embodiment of Fan shown in Fig. 57E and 57H into the system after *Roell* and *Bradley* and *Fan* as combined for the parent claim, and the results would have been obvious.

7. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,057,810 to *Roell et al.* ("*Roell*") in view of U.S. Patent No. 3,205,303 to

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Bradley ("*Bradley*") and further in view of U.S. Patent No. 5,815,126 to *Fan et al.* ("*Fan*") and further in view of U.S. Patent Application Publication No. 2003/0122925 to *Yoon* ("*Yoon*").

As to **claim 5**, in addition to the rejection of claim 1 over *Roell* and *Bradley* and *Fan*:

Roell and *Bradley* and *Fan* does not expressly disclose that said display portion changes, in accordance with the distance between said eyepiece optical systems and the eyes of said user, the size of an image to be displayed.

Yoon discloses a stereoscopic, screen-per-eye, optical display system and in particular a display portion that changes, in accordance with the distance between display screens and the eyes of a user, the size of an image to be displayed (see for example Fig. 8, especially "IMAGE SIZE ADJUSTING PORTION" and [0157]-[0158]) and goes on to disclose a system in which this distance would include the distance from an eyepiece optical system to the viewer's eyes (see for example Fig. 13A, in which the eyepiece optical system comprises the holes 1320 and 1340).

Takumi and *Yoon* are analogous art because they are from the same field of endeavor, which is screen-per-eye optical display systems.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to improve the system of *Takumi* by including the image size adjustment mechanism of *Yoon* such that the size of the image displayed

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changes according to eye to eyepiece optical system distance. The suggestion/motivation would have been to provide advantages such as to cause the user to perceive the image at the appropriate size (see for example Yoon [0160]).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,812,224 to Maeda et al. teaches a head mounted display with ear contact position adjustment.

U.S. Patent No. 6,234,446 to Patterson teaches a supported near-eye display viewed in a position that allows the user to tilt his head downward with respect to the display in order to eat.

U.S. Patent No. 5,784,207 to Satoh is representative of a number of patents that teach adjustment of the distance between face stopping features and the first optical element according to whether or not the user is wearing glasses in which the face stopping features contact the glasses if glasses are worn or the user's face if they are not.

U.S. Patent No. 5,714,967 to Okamura et al. teaches one method of making optical adjustments to accommodate differences in eye relief distance.

U.S. Patent No. 6,069,608 to Izumi et al. teaches graphics, including repeating graphic images, in a peripheral region display to simulate depth. This relates to Group 3 in the election/restriction requirement.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT R. RAINEY whose telephone number is (571)270-3313. The examiner can normally be reached on Monday through Friday 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/RR/

/Amare Mengistu/

Supervisory Patent Examiner, Art Unit 2629